



Liquid Product Recovery (Pigging) Case Study:

Lucas Oil Products

Indiana, US

How Multiple HPS Pigging Systems Are Reducing Waste, Improving Efficiency, and Increasing Product Yields at Lucas Oil Products' Indiana Plant.

HPS Product Recovery Solutions

www.hps-pigging.com



Summary

- **Lucas Oil Products** manufactures high-performance oils and lubricants for industries such as automotive, industrial, and agriculture.
- As part of a recent tank farm upgrade, Lucas Oil Products identified a significant opportunity to improve operational efficiency and reduce waste caused by flushing transfer lines.
- The company faced daily product loss from flushing, prompting the exploration of cost-saving solutions.
- **HPS** designed, implemented, and commissioned a custom pigging system to recover over 99.5% of the product during transfers, eliminating waste and streamlining infrastructure.
- The pigging solution resulted in **zero product waste** during transfers.
- It also allowed Lucas Oil Products to reduce the required lines from a larger network to just three main piggable lines.
- The automated pigging system enhanced operational efficiency, reducing cleaning time and labor while improving throughput.
- The solution contributed to environmental sustainability by significantly reducing wasted oil and minimizing effluent.
- The project led to improved safety, with reduced manual intervention in line cleaning and a minimized risk of spills.

About Lucas Oil Products

Lucas Oil Products, a family-led, American-manufactured brand, has established itself as a leader in the engine oils, additives, and lubricants industry over the past 35 years.

Known for its commitment to superior performance, Lucas produces a broad range of scientifically advanced solutions for various industries. These include automotive, trucking, marine, motorsports, industrial, and home products.



With established industry leadership, Lucas offers over 300 premium products with a global distribution network spanning 48 countries.

Lucas is trusted by professionals and enthusiasts for its unmatched quality and performance. The brand's commitment to innovation continues to provide cutting-edge solutions for every engine-powered need.

The company prides itself on its innovative approach and dedication to sustainability. As part of their ongoing efforts to improve operational efficiency, Lucas Oil Products undertook a significant upgrade to their tank farm, with the goal of reducing waste and improving overall productivity and performance.

Project Background

As part of a recent tank farm upgrade, Lucas Oil Products identified a significant opportunity to reduce product loss. The primary challenge was the substantial product loss incurred from flushing their transfer lines daily. These losses not only represented wasted material but also impacted their bottom line.

Wyatt Crosier, Electrical Engineer for the Lucas Oil Products team explained,

"As part of a recent tank farm upgrade, we identified a significant opportunity to improve our operational efficiency and reduce waste. The primary challenge was the substantial product loss that occurred daily from flushing our transfer lines. This led us to explore cost-saving solutions, and pigging was brought to our attention as a highly effective method."

"By implementing a pigging system, we were able to not only minimize wasted material but also streamline our infrastructure. This solution allowed us to reduce the number of required lines from a larger network down to just three main lines, which are now piggable, resulting in zero product waste during transfers."

Recognizing the need for a solution to minimize waste, Lucas explored various product recovery technologies and discovered that pigging could provide a cost-effective and efficient method for reducing waste during transfers.

Finding a Solution

When looking for a solution, Lucas Oil Products developed a clear set of criteria for an effective product recovery system. Their primary objectives were to:

- **Minimize Product Loss:** The solution had to significantly reduce or eliminate the oil that was previously wasted by flushing lines. This was the biggest cost-saving opportunity./
- **Improve Operational Efficiency:** They needed a system that would streamline their daily processes and reduce the time and labor associated with line cleaning and product transfers.
- **Ensure Safety and Integrity:** Given the nature of their product, the solution had to be safe, reliable, and not compromise the integrity of their pipelines, preventing contamination and potential hazards.
- **Provide a Strong Return on Investment:** The initial cost of the system needed to be justified by long-term savings in product waste and operational expenses.

To find the best solution, Lucas Oil Products carried out thorough benchmarking and research into different pigging technologies used within the oil industry.

They focused on suppliers with experience in lubricant and oil applications, assessing the types of pigs offered and evaluating the system's integration potential with their new tank farm layout.

Wyatt continued,

“To find the best solution for our specific needs, we began by thoroughly researching various pigging technologies and their applications within the oil industry. We also performed a detailed financial analysis to compare the capital expenditure of a pigging system against the projected savings from reduced oil waste.”

Why Lucas Oil Products Chose HPS as their Pigging Systems Provider

After evaluating various options, Lucas Oil Products chose HPS for their pigging solution for several key reasons:

Tailored Solutions: Lucas Oil Products found HPS's commitment to offering customized pigging systems particularly attractive. HPS worked closely with Lucas Oil



Products to understand their specific piping layout, operational challenges, and waste reduction goals.

Proven Expertise and Reputation: HPS has a long-standing reputation as a leader in product recovery solutions, with significant experience in the oil and lubricants sector. Lucas Oil Products was impressed by HPS's proven ability to deliver high product recovery rates with proven, substantial cost savings. HPS's deep expertise gave Lucas peace of mind that they were partnering with specialists who knew how to overcome their particular challenges.

Asked why they chose HPS, the spokesperson explained,

"What we found most attractive about HPS was their commitment to designing a custom solution rather than offering a one-size-fits-all system,"

"They worked with us to understand our specific piping layout, operational challenges, and goals for waste reduction. This bespoke approach gave us confidence that the final system would be highly effective and seamlessly integrated into our new tank farm."

The Solution

HPS worked with Lucas Oil Products to design and implement a custom pigging system that would effectively recover the oils previously lost during transfers. The system was fully automatic, reducing the need for manual intervention and significantly cutting down on labor costs.

HPS designed and supplied a **six-by-three 3-inch HT matrix pigging system**, specifically to increase product yield, improve product quality, and remove product residue remaining in the pipe. This system would allow **six blenders to feed any of 17 tanks**, making the process more efficient and streamlined.

Key features of the HPS solution included:

- **Advanced Pigging Technology:** HPS Advanced Liquid Product Recovery (Pigging) Technology recovers up to 99.5% of the product from the lines, ensuring minimal waste.
- **Tailored Infrastructure:** The solution was designed to integrate seamlessly into Lucas Oil Products' existing transfer lines, optimizing their infrastructure and minimizing the number of required lines.
- **Automated System:** The new systems were automated, reducing the need for manual cleaning and allowing for faster product changeovers.



The Results

Since the implementation of HPS pigging technology, Lucas Oil Products has seen significant improvements in their operations. Some of the key results include:

Increased Product Yield: the HPS pigging systems consistently recover over 99% of the oil from the lines, drastically reducing product waste and improving overall profitability.

Greater Operational Efficiency: The automated systems have greatly reduced the time and labor needed for line cleaning and product transfers, resulting in faster changeovers and increased throughput.

Improved Environmental Sustainability: With the reduction of product waste, Lucas Oil Products has made significant progress toward its sustainability goals by minimizing the amount of wasted oil and reducing their environmental impact.

Enhanced Safety: By automating the cleaning process, the pigging system has reduced manual intervention, lowering the risk of spills and enhancing the overall safety of the operation.

Summarising the results, Wyatt said

“The system has met and, in some cases, exceeded our expectations, delivering tangible benefits across several key areas,”

Reflections on the Project

How It Went

The project was well-managed, highly collaborative, and delivered exactly as planned.

From the initial consultation through to installation, HPS demonstrated professionalism, technical expertise, and a strong commitment to understanding Lucas Oil Products' requirements. Working closely with Lucas Oil Products' engineering team, HPS ensured seamless integration into existing operations.

HPS Strengths

HPS brought a combination of custom design, proven technology, and a true partnership approach. Rather than simply supplying equipment, HPS identified and solved a critical operational challenge, delivering a system perfectly tailored to Lucas Oil Products' needs. The result has been a significant ROI already achieved, alongside long-term operational benefits.

Client Feedback

Summarising the project, the Lucas Oil Products team commented on several key positive outcomes:

- **Enhanced Operational Safety:**
The automated nature of the HPS pigging system has reduced the need for manual intervention during line cleaning. This has minimised the risk of spills and significantly improved safety for operational staff.

- **Simpler Infrastructure:**

During the tank farm upgrade, the HPS solution enabled a far simpler piping layout. Instead of running numerous redundant lines, the team utilised just three main piggable lines - reducing both initial capital expenditure and installation complexity.

- **Excellent Partnership:**

Collaboration with HPS was professional, open, and solution-focused from start to finish. The expertise and hands-on support provided by the HPS team throughout the design, installation, and commissioning phases ensured a smooth transition. In addition, comprehensive training provided by HPS gave Lucas Oil Products' staff the knowledge and confidence to operate the new system effectively from day one.

When asked if they would recommend HPS, Wyatt commented:

“Without a doubt, we would highly recommend HPS to other companies, especially those in the oil, chemical, or food and beverage sectors that are dealing with significant product waste from transfer lines”

“The HPS team's expertise, the quality of their technology, and the tangible results we've achieved make it a compelling solution. For any company looking to improve sustainability, cut costs, and boost operational efficiency, HPS is an excellent partner to work with.”

The Future

Lucas Oil Products is already exploring additional opportunities to expand the use of pigging technology within their operations.

The success of this initial project has proven the value of pigging in improving efficiency and reducing waste, and they plan to implement it in other areas of their production process.

Wyatt concluded,

“As we continue to modernize and expand our facilities, we will certainly look for opportunities to integrate pigging into other areas where we can reduce waste and improve efficiency,”

“The results from this first project have given us a clear roadmap for how to achieve significant savings and operational improvements across our business”.

Contact HPS

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